

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **McGuire et al.** Confirmation No.: **1852**
Serial No.: **10/714,370** Group Art Unit: **1771**
Filing Date: **November 14, 2003** Examiner: **Jennifer Steele**
For: **IMPROVED FLAME RETARDANT NONWOVENS**

Mail Stop Appeal-Brief--Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

APPEAL BRIEF PURSUANT TO 37 C.F.R. § 41.37

This brief is being filed in support of Appellants' appeal from the rejections of claims 1-7, 9, 15-17, 33 and 34 dated July 16, 2007. A Notice of Appeal was filed on October 16, 2007.

1. REAL PARTY IN INTEREST

The application is assigned to Western Nonwovens Inc.

2. RELATED APPEALS AND INTERFERENCES

An Appeal Brief was filed in Application No. 11/037,522 on September 25, 2007. No action has been taken by the Examiner in that appeal to date.

A Notice of Appeal has been filed on October 25, 2007, in the application that the present Examiner relies upon in making the obviousness-type double patenting rejection in this case, Application No. 10/392,999.

An Appeal Brief was filed in Application No. 11/166,567 on November 30, 2007. No action has been taken by the Examiner in that appeal to date.

3. STATUS OF CLAIMS

Rejected: Claims 1-7, 9, 15-17 and 33-34

Allowed: None

Withdrawn: 29-32¹

Objected to: None

Canceled: 8, 10-14, 18-28

Appealed: 1-7, 9, 15-17, and 33-34

4. STATUS OF AMENDMENTS

The amendment after final rejection received on August 29, 2007, was entered by the Examiner as noted in the Advisory Action of September 5, 2007.

5. SUMMARY OF CLAIMED SUBJECT MATTER

The following summary of claim 1 is based upon the marked up copy of the substitute specification filed April 16, 2007, as amended August 29, 2007.

A nonwoven article comprising	Paragraph bridging pages 3-4
from about 6 to about 25 wt % of low melt binder	Page 7, second full paragraph-page 8, first full paragraph
from about 25 to about 75 wt. % synthetic fiber coated an FR material	Page 5, First paragraph-paragraph bridging pages 5-6
synthetic and/or natural fiber, not coated with an FR material	Page 9, first three paragraphs
wherein any inherent FR fiber in the article is selected from the group consisting of inherent FR polyester, inherent FR rayon and mixtures thereof	The inherent FR fibers of this Markush group are described at page 5, first full paragraph

¹ The cover sheet of the Final Rejection indicates that these claims are rejected. This is incorrect as they have been withdrawn from consideration by the Examiner and are not rejected in the Final Rejection.

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL²

- Claim 1 under 35 U.S.C. § 103(a) as unpatentable over WO 90/11171 (Neogi) in view of US Patent No. 3,625,753 (O'Brian)
- Claims 1, 3, 4, 6, 7, 9, and 15-17 under 35 U.S.C. § 103(a) as unpatentable over US Pat. Pub. 2004/0198125 (Mater) in view of Neogi.
- Claim 2 under 35 U.S.C. 103(a) as unpatentable over Mater, Neogi and US 2,381,487 (Cook)
- Claims 33 and 34 under 35 U.S.C. § 103(a) as unpatentable over Mater, Neogi and "Flame Retardancy; Encyclopedia of Polymer Science and Technology"
- Claims 1-7 and 9, 15-17 and 33-34 as provisionally rejected under the judicially created doctrine of obvious-type double patenting over claims 1-4, 6-24 of co-pending Application No. 10/392,999.

7. ARGUMENT**Rejection of claim 1 under 35 U.S.C. § 103(a) based upon Neogi and O'Brian**

In relevant part, claim 1 requires the nonwoven article to include from about 25 to about 75 wt. % synthetic fiber coated with an FR material.

Neogi describes a natural fiber product where natural fibers are coated with a thermoplastic binder. *Id.*, page 7, lines 13-23. The binder coated natural fibers may be blended with other non-treated fibers. *Id.* The fiber blend may be formed into a web that is subsequently heat fused. *Id.* The binder coated natural fibers may have particulate material adhered thereto to impart functional properties. *Id.*, page 13, line 36-page15, line 26. The particulate material may be fire retardant. *Id.*

The Examiner states that Neogi differs from claim 1 in that it does not "teach coating synthetic fibers with FR material." Final Rejection, page 5. The Examiner relies upon O'Brian to make up this difference. *Id.*

² Rejections of claim 1 under 35 U.S.C. § 112, first and second paragraphs, as well as an accompanying objection to the specification were withdrawn by the examiner in the Advisory Action mailed September 5, 2007.

O'Brian describes the treatment of cellulosic textile materials with aqueous solutions of dimethylol dicyandiamide and phosphoric acid to create a durable, flame retardant finish to the textile. *Id.*, col. 1, lines 3-7. The cellulosic textile of O'Brian may include a content of synthetic fiber. *Id.*, col. 1, lines 46-55. The coating of O'Brian is applied to the textile material, not bulk fibers. *Id.* As exemplified in O'Brian, fabrics are padded with the solution, dried and heated. *Id.*, col. 2, lines 19-35.

The Examiner concludes that it would have been obvious to one of ordinary skill in the art to "use FR coated synthetic fibers instead of FR coated natural fibers in Neogi motivated by O'Brian who teaches coating either synthetic or natural fibers with FR material in order to make an FR fabric." Final Rejection, page 5. It is urged that the Examiner erred in fact and law in reaching this conclusion.

A claim is obvious only if the subject matter of the claim as a whole would have been obvious to a person of ordinary skill in the art. 35 U.S.C. § 103(a). Since the Examiner's fact finding is in error, her legal conclusion of obviousness is in error. Here, the Examiner proposes to "use FR coated synthetic fibers instead of FR coated natural fibers in Neogi," as purportedly "motivated" by O'Brian. Final Rejection, page 5. However, O'Brian treats fibers in the form of textile materials, e.g., fabrics, not fibers in bulk. There are no loose or individual fibers created by the O'Brian method that could be used in the web of Neogi. Thus, one factual premise of the Examiner's rejection is in error.

Another factual error made by the Examiner in the rejection is her proposal to use "FR coated fibers instead of FR coated natural fibers in Neogi." *Id.* There is no reason why a person of ordinary skill in the art would do so. The Neogi invention is based upon natural fibers coated with a synthetic resin. To replace the coated natural fibers with coated synthetic fibers as proposed by the Examiner would destroy the Neogi product. Neogi can blend uncoated synthetic fibers with the coated natural fibers. *Id.*, page 24, line 33-page 25, line 29. There is simply no reason to use FR coated synthetic fibers in Neogi as urged by the Examiner.

The ultimate question to be answered in this rejection is whether a person having ordinary skill, in looking at only Neogi and O'Brian without knowledge of claim 1 or the

present patent application, would have found the subject matter of claim 1 as a whole obvious. O'Brian describes treatment of textile materials that are unlike the nonwoven webs formed by Neogi. Bulk fibers are not treated in O'Brian as in Neogi. There is no reason why one would replace the treated natural fibers of Neogi with treated synthetic fibers. When these facts are viewed in light of the statutory standard of obviousness it is apparent that the Examiner has used impermissible hindsight in constructing the rejection. Absent knowledge of the subject matter of claim 1, a person of ordinary skill in the art would have no reason to combine Neogi and O'Brian as proposed by the Examiner.

Reversal of the rejection is courteously solicited.

**Rejection of claims 1, 3, 4, 6, 7, 9, and 15-17 under 35 U.S.C. § 103(a) based upon
Mater and Neogi**

1. Separate argument for claim 1

Mater, in the form of WO 03/023108, is cited at pages 2-3 of the specification. Since the Examiner relies upon the U.S. Patent Publication of Mater, citations to Mater will be to the applied document.

Mater describes a nonwoven high loft flame barrier that may be used in a mattress. *Id.*, e.g., Abstract. The fiber composition used in Mater is described as follows:

Category 1: 10 – 85%, more preferably 20 – 70% and even more preferably 30 – 60%.	
Category 2: 10 – 85%, more preferably 20 – 70% and even more preferably 30 – 60%.	
Category 3: 0 – 30%, more preferably 5 – 25% and even more preferably 10 – 20%.	
Category 4: 0 – 40%, more preferably 5 – 30% and even more preferably 10 – 20%.	
Category 5: 0 – 40%, more preferably 5 – 30% and even more preferably 10 – 20%.	
Category 6: If used, 0 – 40%, more preferably 5 – 30% and even more preferably 10 – 20%.	

Id., paras. [0086]-[0092].

According to Mater, Category 2 fibers are those produced from polymers made with halogenated monomers and produce oxygen depleting gases which help prevent volatile decomposition vapors of underlying or adjacent materials to autoignite. *Id.*, para. [0094]. Examples of Category 2 fiber are set forth in paras. [0071]-[0073] including modacrylics.

The Examiner has determined that Mater does not teach “FR coated fiber and [that the] inherently FR fibers in the blend are only rayon or polyester or combinations thereof.” Final Rejection, page 6. The Examiner relies upon Neogi to make up these differences.

The Examiner finds that Neogi “teaches that fire retardant fibers can be formed by coating fibers with a resin comprising fire retardant particles and that such fibers can be blended with other non coated, no fire retardant fibers.” Final rejection, page 6. The Examiner concludes that it would have been obvious to “have employed FR coated fibers as taught by Neogi in a blend of FR fibers and non-FR fibers.” *Id.* The purported motivation for this conclusion is stated to be “an alternative, equivalent means of providing fire resistant fibers....” *Id.*, pages 6-7. The Examiner’s conclusion of obviousness is legally and factually in error.

In making this rejection, the Examiner has lost sight of the fact that claim 1 requires the presence of synthetic fiber coated with an FR material. The Examiner has only relied upon Neogi for FR coated fibers in this rejection and as explained above in regard to the previous obviousness rejection, Neogi only describes FR coated natural fibers. Thus any combination of Mater and Neogi would not result in the product of Mater containing synthetic fibers coated with FR material.

Furthermore, the Examiner agrees that Mater does not teach a nonwoven article where the inherent FR fibers in the blend are only rayon or polyester or combinations thereof, yet does not further address how Neogi makes up this difference. When Neogi is read in its entirety, it is seen that Neogi cannot make up this difference as the reference only broadly describes the use of synthetic fibers in those products.

The Examiner states at page 11 of the Final rejection that Mater describes “individual layers that include only an inherent FR fiber of category 1, a synthetic fiber and a binder.” The Examiner does not refer to any particular portion of Mater in this regard. However, Mater does describe nonwoven materials used in the construction of mattresses in the examples that have 55% melamine (Category 1), 30% polyester and 15% binder fiber. See, e.g., para. [0124]. Those nonwovens are not according to the invention of Mater since they do not include a content of Category 2 halogenated fiber. Furthermore, claim 1 is limited to

inherent FR fibers that are either polyester or rayon or mixtures thereof, not melamine. Thus, these non-inventive nonwovens of Mater do not render the subject matter of claim 1 obvious.

While not relied upon by the Examiner, it is noted that Mater does discuss layers that may contain Category 1 but not Category 2 fibers in paras. [0094] and [0096]. However, these sections of Mater do not teach or suggest the specific nonwoven articles required by claim 1 as they do not describe in any detail the total fiber content of any such layer.

It is also noted that Mater describes bonding the nonwovens of that invention by use of a resin or adhesive that can contain FR additives in para. [0106]. The Examiner has not relied upon this portion of Mater in the rejection and it is not seen to teach or suggest the subject matter of claim 1.

Again, the ultimate question to be resolved is whether a person of ordinary skill in the art, looking at only Mater and Neogi without knowledge of claim 1 and this patent application, would have found the subject matter of claim 1 as a whole obvious. It is readily seen that Neogi does not teach synthetic fibers coated with an FR material or any inherent FR fibers. Thus, the Examiner's legal conclusion of obviousness is based upon incorrect fact finding.

Reversal of the rejection is courteously solicited.

2. No separate argument for claims 3-5, 7, 9 and 15-17

Solely for the purpose of this appeal, no separate argument is made for these claims. It is submitted that they are patentable for the reasons set forth above in regard to claim 1.

Reversal of the rejection is courteously solicited.

Rejection of claim 2 based upon Mater, Neogi and Cook

Solely for the purpose of this appeal no separate argument is made for claim 2. It is submitted that claim 2 is patentable for the reasons set forth above in regard to claim 1.

Reversal of the rejection is courteously solicited.

Rejection of claims 33-34 based upon Mater, Neogi and "Flame Retardancy; Encyclopedia of Polymer Science and Technology"

Solely for the purpose of this appeal no separate argument is made for claims 33-34. It is submitted that these claims are patentable for the reasons set forth above in regard to claim 1.

Reversal of the rejection is courteously solicited.

Provisional Obviousness-type Double Patenting Rejection Based Upon Claims 1-4, 6-24 of Application No. 10/392,999

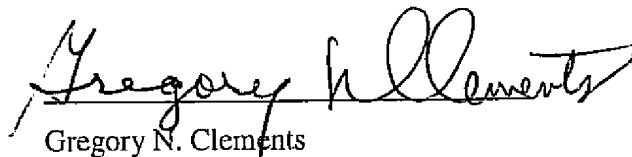
For the purpose of this appeal no argument on the merits will be presented. A Terminal Disclaimer will be filed upon the indication of allowable subject matter.

Summary

The Examiner's obviousness rejections are legally and factually erroneous and should be reversed.

Respectfully submitted,

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CLAIMS APPENDIX

The claims on appeal are:

- 1) A nonwoven article comprising from about 6 to about 25 wt. % of low melt binder, from about 25 to about 75 wt. % synthetic fiber coated with an FR material, and synthetic and/or natural fiber, not coated with FR material wherein any inherent FR fiber in the article is selected from the group consisting of inherent FR polyester, inherent FR rayon and mixtures thereof.
- 2) The nonwoven article of claim 1, wherein said FR material contains phosphorus, phosphorus compound(s), phosphorus complexes, or combinations thereof; amine compounds, boric acid, bromide, urea-formaldehyde compound(s), phosphate-urea compound(s), ammonium sulphate, or halogen based compounds, or combinations thereof.
- 3) The nonwoven article of claim 1, wherein said uncoated synthetic fiber is selected from the class of rayon, polyester, nylon, polyolefin, acrylic, and combinations of two or more of these.
- 4) The nonwoven article of claim 3, containing inherent FR rayon.
- 5) The nonwoven article of claim 3, containing inherent FR polyester.
- 6) The nonwoven article of claim 1, wherein said uncoated natural fiber is selected from the class of flax, kenaf, hemp, cotton, wool, silk, and combinations of two or more of these.
- 7) The nonwoven article of claim 1, wherein said low melt binder is a bicomponent fiber, a low melt polymer fiber, or a latex resin.
- 9) The nonwoven article of claim 1, wherein said uncoated synthetic and /or natural fiber comprises from about 20 to about 70 wt. % of said article.

- 15) The nonwoven article of claim 1, wherein said low melt binder is bicomponent fiber, said FR coated synthetic fiber is rayon, and said uncoated synthetic fiber is PET.
- 16 The nonwoven article of claim 15, wherein said bicomponent fiber is 20 wt. % of said article, said FR coated rayon fiber is 50 wt. % of said article, and said uncoated PET fiber is 30 wt. % of said article.
- 17) The nonwoven article of claim 15, wherein said bicomponent fiber is 15 wt. % of said article, said FR coated rayon fiber is 40 wt. % of said article, said uncoated PET fiber is 15 wt. % of said article.
- 33) The nonwoven article of claim 2, wherein said phosphorus is red phosphorous.
- 34) The nonwoven article of claim 2, wherein said phosphorous compound(s) are esters of phosphorous.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

No decisions from the Board have been received in the related appeals.